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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A silicon nitride member comprising a substrate formed by sintering a silicon nitride material, and a hard film comprising a hard component selected from the group consisting of Al_2O_3, TiCN, TiN and TiC formed on a surface of said substrate, said silicon nitride member characterized in that:

when the strength of said substrate measured before said substrate is coated with said hard film is taken as 100%, the strength of said silicon nitride member measured after said substrate is coated with said hard film is 70% to 95%, and

when used to cut plain cast iron at a cutting speed of 100 m/min, a feed rate of 0.1 mm/rev, a depth of cut of 1.0 mm and a cutting time of 60 min, the silicon nitride member exhibits flank wear in an amount of not greater than 0.2 mm and notch wear in an amount of not greater than 0.22 mm.

2. (original): The silicon nitride member as claimed in claim 1, wherein a change in weight of said substrate associated with sintering is 1.5% to 3.5% by weight.

3. (currently amended): A silicon nitride member comprising a substrate formed by sintering of a silicon nitride material, and a hard film comprising a hard component selected from the group consisting of Al_2O_3, TiCN, TiN and TiC formed on a surface of said substrate, said silicon nitride member characterized in that:

when the amount of a grain boundary phase as measured at a central portion of said substrate is taken as 100% by volume, at least ~~one~~ condition (3) of the following conditions (1) to ~~(5)~~ (3) is satisfied:

(1) the amount of a grain boundary phase as measured in the vicinity of a depth of 100 μm from the surface of said substrate is less than 30% by volume;

(2) the amount of a grain boundary phase as measured in the vicinity of a depth of 200 μm from the surface of said substrate is 30% to 50% by volume; and

(3) the amount of a grain boundary phase as measured in the vicinity of a depth of 300 μm from the surface of said substrate is 50% to 70% by volume;

~~(4) the amount of a grain boundary phase as measured in the vicinity of a depth of 400 μm from the surface of said substrate is 70% to 85% by volume; and~~

~~(5) the amount of a grain boundary phase as measured in the vicinity of a depth of 500 μm from the surface of said substrate is 85% to 100% by volume~~.

4. (original): The silicon nitride member as claimed in claim 3, wherein a change in weight of said substrate associated with sintering is 1.5% to 3.5% by weight.

5. (currently amended): A method, for manufacturing a silicon nitride member comprising a substrate formed by sintering a silicon nitride material, and a hard film comprising a hard component selected from the group consisting of Al_2O_3, TiCN, TiN and TiC formed on a surface of said substrate, said silicon nitride member characterized in that:

when the strength of said substrate measured before said substrate is coated with said hard film is taken as 100%, the strength of said silicon nitride member measured after said

substrate is coated with said hard film is 70% to 95%, and when used to cut plain cast iron at a cutting speed of 100 m/min, a feed rate of 0.1 mm/rev, a depth of cut of 1.0 mm and a cutting time of 60 min, the silicon nitride member exhibits flank wear in an amount of not greater than 0.2 mm and notch wear in an amount of not greater than 0.22 mm, which method comprises:

adjusting a condition employed in sintering said substrate such that a change in weight of the substrate associated with sintering is 1.5% to 3.5% by weight.

6. (currently amended): A method, for manufacturing a silicon nitride member comprising a substrate formed by sintering of a silicon nitride material, and a hard film comprising a hard component selected from the group consisting of Al_2O_3, TiCN, TiN and TiC formed on a surface of said substrate, said silicon nitride member characterized in that:

when the amount of a grain boundary phase as measured at a central portion of said substrate is taken as 100% by volume, at least ~~one~~ condition (3) of the following conditions (1) to ~~(5)~~ (3) is satisfied:

(1) the amount of a grain boundary phase as measured in the vicinity of a depth of 100 μm from the surface of said substrate is less than 30% by volume;

(2) the amount of a grain boundary phase as measured in the vicinity of a depth of 200 μm from the surface of said substrate is 30% to 50% by volume; and

(3) the amount of a grain boundary phase as measured in the vicinity of a depth of 300 μm from the surface of said substrate is 50% to 70% by volume;

~~(4) the amount of a grain boundary phase as measured in the vicinity of a depth of 400 μm from the surface of said substrate is 70% to 85% by volume; and~~

~~(5) the amount of a grain boundary phase as measured in the vicinity of a depth of 500 μm from the surface of said substrate is 85% to 100% by volume~~, which method comprises:

adjusting a condition employed in sintering said substrate such that a change in weight of the substrate associated with sintering is 1.5% to 3.5% by weight.

7. (withdrawn): The method as claimed in claim 5 for manufacturing a silicon nitride member, comprising the steps of:

heating the substrate at a temperature in a range of from 1800°C to 1900°C for 60 to 180 minutes in a nitrogen atmosphere pressurized at from 2 to 6 atmospheres; subsequently lowering the temperature to a range of 1550°C to 1650°C; and maintaining the substrate at a reduced temperature for 60 to 180 minutes under a reduced pressure not higher than 13 kPa.

8. (withdrawn): A cutting tool formed of the silicon nitride member as claimed in claim 1.

9. (withdrawn): A cutting tool formed of the silicon nitride member as claimed in claim 3.

10. (previously presented): The silicon nitride member as claimed in claim 1, wherein the hard film consists of a single layer of a single hard component or a multilayer of the same hard component or different hard components.

11. (previously presented): The silicon nitride member as claimed in claim 3, wherein the hard film consists of a single layer of a single hard component or a multilayer of the same hard component or different hard components.

12. (previously presented): The silicon nitride member as claimed in claim 1, wherein the silicon nitride material contains a sintering aid in an amount of up to 3.0 % by weight.

13. (previously presented): The silicon nitride member as claimed in claim 3, wherein the silicon nitride material contains a sintering aid in an amount of up to 3.0 % by weight.